

labeled "n2", as is recited on page 1 of the specification. Applicants have amended Fig. 2 in accordance with the Examiner's suggestion. As this is merely making the figure consistent with the specification, no new matter has been added. Accordingly, it is requested that this amendment be entered, and the objection withdrawn.

Specification

The Examiner also objects to the title as not being descriptive. Applicants have amended the title herein to be "Self Light-Emitting Device Using An Inert Gas." It is respectfully submitted that this overcomes the Examiner's objection.

Claim Rejections - 35 USC §102 and §103

The Examiner rejects Claims 1-4 under 35 U.S.C. §102 (e) as being anticipated by Onitsuka et al. The Examiner further rejects Claims 5-12 under 35 USC §103 as being unpatentable over Strite in view of Onitsuka. These rejections are respectfully traversed.

Applicants have amended independent Claims 1, 5, 7, 9, and 11. Each of these claims is directed to a self light-emitting device and each now includes the limitation of an opaque electrode over a substrate, an EL layer over the opaque electrode and a transparent electrode over the EL layer. See for example, page 2, lns. 18-20 of the specification which discusses the EL element of the present application being an opaque electrode, a transparent electrode and an EL layer sandwiched therebetween (see also e.g. Fig. 3 which has a opaque electrode 301, an EL layer 305 over the opaque electrode 301 and a transparent electrode 306 over the EL layer 305; or Fig. 4 having a substrate 401, an opaque electrode 403 of aluminum over the substrate 401, an EL layer 404 over the opaque electrode 403 and a transparent electrode 405 of ITO over the EL layer 404).

This structure is not disclosed or suggested in Onitsuka. More specifically, the Examiner alleges that in Onitsuka, D11 is an opaque electrode and D15 is a transparent electrode. This is incorrect.

Onitsuka states that D11 is "a hole injecting electrode" (col. 6, lns. 56-57) and states that "A transparent electrode is used as the hole injecting electrode" which can be made of ITO (col. 7, lns. 7-13). D15 is described as "an electron injecting electrode" which can be made of a metal such as aluminum (col. 6, lns. 59-60; col. 7, lns. 15-18). Hence, the structure shown in Onitsuka is a substrate with a transparent electrode thereover, an EL layer over the transparent electrode and an opaque layer over the EL layer. Strite has a similar structure to that shown in Onitsuka. Such a structure is clearly different than the structure claimed in the present application.

Further, the present invention has an advantage that an efficiency of extracting light is improved since both the EL layer and the transparent electrode has a film thickness in which there is no occurrence of a guided light, and a light generated in an EL element travels through an inert gas, a solid state layer (cover material), and a gas (air) in this order after it has transmitted the transparent electrode (see e.g. page 2, ln. 11-page 3, ln. 19 of the present application). This advantage is not disclosed in Onitsuka.

Accordingly, the device of the amended claims of the present application is clearly not disclosed or suggested by the cited references. Hence, the claims are patentable thereover. Therefore, it is requested that these rejections now be withdrawn.

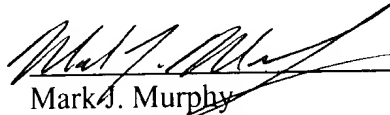
Conclusion

It is respectfully submitted that the present application is now in a condition for allowance, and accordingly, it is requested that it now be allowed.

Favorable reconsideration is earnestly solicited.

Respectfully submitted,

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Marked-up copy of the amendments made herein:

IN THE TITLE:

Please amend the title as follows:

Self Light-Emitting Device Using An Inert Gas

IN THE DRAWINGS

Please amend the drawings as shown in red in the attached figures.

IN THE CLAIMS:

Please amend the claims as follows:

1. (Amended) A self light-emitting device comprising:

an opaque electrode over a substrate;

an EL layer [sandwiched between a transparent electrode and an] over the opaque electrode;

[and]

a transparent electrode over the EL layer; and

an inert gas filled in a space between the transparent electrode and a cover material,

wherein each of said EL layer and said transparent electrode has a film thickness (d) in which there is no occurrence of a guided light.

3. (Amended) A self light-emitting device comprising:

an opaque electrode over a substrate;

an EL layer [sandwiched between a transparent electrode and an] over the opaque electrode,
said EL layer having a light-emitting layer;

a transparent electrode over the EL layer;
an inert gas is filled in a space between the transparent electrode and a cover material; and
a buffer layer provided between said light-emitting layer and said transparent electrode or
between said light-emitting layer and said opaque electrode,
wherein each of said EL layer and said transparent electrode has a film thickness (d) in which
there is no occurrence of a guided light.

5. (Amended) A self light-emitting device having a pixel portion comprising a semiconductor device and an EL element electrically connected to the semiconductor device formed on a substrate, said EL element comprising:

an opaque electrode;
an EL layer [sandwiched between a transparent electrode and] over the an opaque electrode;
[and]
a transparent electrode over the EL layer; and
an inert gas filled in a space between the transparent electrode and a cover material,
wherein each of said EL layer and said transparent electrode has a film thickness (d) in which
there is no occurrence of a guided light.

7. (Amended) A self light-emitting device having a pixel portion comprising a semiconductor device and an EL element electrically connected to the semiconductor device formed on a substrate, said EL element comprising:

an opaque electrode;
an EL layer [sandwiched between a transparent electrode and an] over the opaque electrode,

said EL layer having a light-emitting layer;

a transparent electrode over the EL layer;

an inert gas filled in a space between the transparent electrode and a cover material; and

a buffer layer provided between said light-emitting layer and said transparent electrode or between said light-emitting layer and said opaque electrode,

wherein each of said EL layer and said transparent electrode has a film thickness (d) in which there is no occurrence of a guided light.

9. (Amended) A self light-emitting device having a pixel portion comprising:

a plurality of opaque electrodes arranged in stripe shapes over a substrate;

an EL layer over the plurality of opaque electrodes;

a plurality of transparent electrodes over the EL layer, the plurality of transparent electrodes provided in stripe shapes so as to be orthogonal to the plurality of opaque electrodes; and

[an EL layer provided between the plurality of opaque electrodes and the plurality of transparent electrodes; and]

an inert gas filled in a space between the transparent electrode and a cover material,

wherein each of said EL layer and said transparent electrode are film thickness (d) in which there is no occurrence of a guided light.

11. (Amended) A self light-emitting device having a pixel portion comprising:

a plurality of opaque electrodes arranged in stripe shapes over a substrate;

an EL layer over the plurality of opaque electrodes;

a plurality of transparent electrodes over the EL layer, the plurality of the transparent

electrodes provided in stripe shapes so as to be orthogonal to the plurality of opaque electrodes; and

[an EL layer provided between the plurality of opaque electrodes and the plurality of transparent electrodes;]

an inert gas filled in a space between the transparent electrode and a cover material; and

a buffer layer provided between said EL layer and said transparent electrode or between said EL layer and said opaque electrode,

wherein each of said EL layer and said transparent electrode has a film thickness (d) in which there is no occurrence of a guided light.